

III. REMARKS

In the Office Action, claims 1, 2, 8 and 10-13 were rejected under 35 U.S.C. 103 as being unpatentable over Gong (Automatic Parsing..), and further in view of Dimitrova (Semantic video database retrieval) for reasons set forth in the Office Action. Claims 3-6, 9 and 14-20 were rejected under 35 U.S.C. 103 as being unpatentable over Dimitrova in view of Gong for reasons set forth in the Office Action.

The following argument is presented to distinguish the subject matter of the claims from the teachings of the cited art so as to overcome the rejections under 35 U.S.C. 103 and to show the presence of allowable subject matter in the claims.

In the Office Action, the examiner notes (Point 23) that the prior rejection of claims 1, 2, 8 and 10-13 based on the teachings of Gong is withdrawn, and that a new ground of rejection is made based on Gong in view of Dimitrova. The new ground of rejection, as presented with respect to claim 1 (Point 7), states that Gong discloses a description means for contents of a motion picture, but fails to disclose a description means providing a description based on the shape of an object. The examiner relies on Dimitrova to disclose that the object description in a motion picture (top of page 4 of the Action) can include changing shape.

In the prior response it was argued by Applicant that Dimitrova does not deal with an object having a changing shape, but may regard an object as being composed of rigid components treated by separate vectors as though they are separate objects. The examiner was not persuaded by this argument (Point 23 of the

Action). Applicant respectfully traverses the position of the examiner to show that the combination of the teaches of Gong and Dimitrova does not suggest the invention as set forth in any of the present claims and, in fact, would direct one away from the practice of the present invention.

In the rejection of claim 1 (page 3 of the Action, beginning at line 14) the examiner relies on Dimitrova to disclose object activities from which one can infer event information. Then, as noted above, the examiner concludes (top of page 4) that the Dimitrova motion picture can include changing shape for classification of pictures. A similar observation by the examiner appears at the top of page 5 with respect to claim 2. In the rejection of claim 3 (page 7, second paragraph) the examiner observes that Dimitrova uses changes in shape to assign actions of an object, where after assembling object activities, one can infer information. Similar comments are made with respect to other ones of the independent claims.

However, there are further teachings of Dimitrova that would direct one away from the practice of the present invention.

Dimitrova, in Fig. 3, presents a picture of a moving object, a person represented as a stick figure where various straight lines represent arms, legs and back. Fig. 3 also presents arrows to show relative movement among the various components (arms, legs) of the stick figure. The shape of the person, as represented by the stick figure, can be understood only in terms of the relative orientations of the components (whether an arm points up, down, or sideways, for example). If the shape of the person, or changes in shape of the person, are to be employed as part of the signal processing operation in the communication of

a video, then Dimitrova must describe some form of operation in which there is a sensing of a shape of the object, and an employing the object shape, or change of shape, in order to accomplish the communication of the video. This is not done by Dimitrova.

Dimitrova teaches (top of left column on page 223) that an object is to be regarded as rigid or consisting of rigid parts connected to each other. This is consistent with the representation of the person of Fig. 3 by a stick figure. Beginning at line 11, Dimitrova teaches that a non-rigid body is to be represented by clusters of matter, each of which is to be treated as a separate moving part (rigid object). Therefore, with reference to the stick figure of the person, as the object about which a video is to be communicated, each of the components of the object is rigid and has a fixed shape. A separate trajectory is associated with each component of the object.

In the high-level motion analysis (beginning in the middle of the left column), Dimitrova teaches an association of activity with object-trajectory representation. Recognition of an activity is based on a relative positioning among object sub-parts, relative timing among movements of the parts, and interaction among the parts. This is consistent with the representation of the stick figure in Fig. 3 of Dimitrova.

Dimitrova then proceeds to discuss recovering of a high-level motion representation, and states (top of right column, in the passage cited by the examiner) that one must identify the object components. These components are described in further detail on page 224, left column in the second full paragraph. Dimitrova

lists attributes of the components such as image, description, name and shape. In other words, with respect to the stick figure representation of the object (the person of Fig. 3), it should be known that one of the sub-parts is an arm, and has an elongated shape. Dimitrova requires that, in order to receive the video of the stick figure, one must observe motion of the arms and the legs and the back of the person, and observe the timing of these motions in order to discriminate what activity is taking place (page 223, top paragraph of right column).

Thus, it is apparent that, in the communication of a video according to Dimitrova, an object is treated as a rigid object, sub-parts of the object are treated as rigid components of the object, and the respective components are processed by dealing with their respective trajectories. Upon presentation of these components and trajectories to the receiver of the video, one is able to discriminate activities of the object (the person of Fig. 3) and infer event information, according to Dimitrova.

It is important to notice, that while shape is listed by Dimitrova as one of the attributes of the object, the rigid components of the object can not undergo a change in shape, and that, in the foregoing formulation of the Dimitrova process of communication of a video, including the mathematical description, shape and a change of shape do not form a part of the Dimitrova process.

In contrast, in the present invention, as shown by present claim 1, the claim calls for means for describing each of a plurality of objects on a motion picture by position on a reference plane and a predefined type of actions. The claim states the describing means provide a description based on changes in the

shape of an object. Further, the claim calls for means for describing each of a plurality of scenes in the motion picture, and teaches that this is accomplished by using the means for describing each of the plurality of objects in respective ones of the scenes. It is clear from the foregoing teachings of claim 1 that the changes in the shape of an object do play a role in the communication of the motion picture.

By way of further example, the method of present claim 3 calls for setting a description unit based on a predefined type of actions of each of the objects by using changes in shape of each object so as to assign actions of each object as respective behavioral sections. Clearly, in this claim, the changes in the shape of an object play a role in the communication of the motion picture.

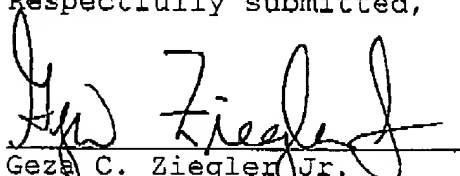
Upon comparing the teachings of the present invention with the foregoing teachings of Dimitrova, Dimitrova does not teach that the objects change their shapes and that one utilizes these changes in shape as a step in communicating a motion picture. Rather, Dimitrova teaches that the objects and their components are rigid. Upon an attempted combination of Dimitrova with Gong, it is noted that Gong (Abstract) teaches the construction of a model of an image, such as a soccer game, for which a video image is to be communicated. It is urged that the teaching of Dimitrova would direct one away from the practice of the present invention, and provides no motivation to combine the teachings of the two references. Nor does Gong provide a motivation to combine the two references, considering that Dimitrova teaches away from such combination.

Accordingly, it is urged that the foregoing argument shows that there is no motivation to combine the references, and even if one attempts to combine the teachings of the two references, there is a teaching away from the practice of the present invention. Therefore, it is believed that this argument has overcome the grounds of rejection of the present claims, and that the present claims have allowable subject matter.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

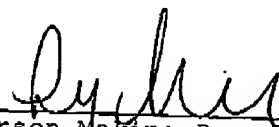

Geza C. Ziegler Jr.
Reg. No. 44,004

24 FEBRUARY 2006
Date

Perman & Green, LLP
425 Post Road
Fairfield, CT 06824
(203) 259-1800
Customer No.: 2512

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